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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/484,612	01/18/2000	Joanna Qun Zang	CISCP130/1343	9893

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EXAMINER
WILLIAMS, DEMETRIA A

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/484,612	ZANG ET AL.	
	Examiner	Art Unit	
	Demetria A. Williams	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,9-11,13,15-21,23,25-28,30,31,33-36,38-43,45,47-53 and 55-59* is/are rejected.

7)☒ Claim(s) *7,8,12,14,22,24,29,32,37,44,46 and 54* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 January 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4,5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "43" has been used to designate both MUX and HFC in figure 2c. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: reference character 89 which in described on pages 12 ad 13 in reference to figure 2E. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: reference character 317 in figure 3A. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "910" and "1310" have both been used to designate a plurality of wireless transmitting and receiving devices in figure 9. The specification, on page 34, uses reference character 910 while the actual figure shows reference character 1310. A proposed drawing

correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1-6, 9-11, 13, and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Otani et al ("Otani").

Referring to claim 1, Otani discloses a method of providing backup service to a group of cable modems comprising receiving information regarding the status of the group of modems from the working device to synchronize the protecting device, determining that the protecting device is to take over service, and taking over service to the group of cable modems (see generally column 2, lines 1-12).

Regarding claim 2, Otani further discloses that receiving information involves receiving a synchronization message from the working device via a monitor device (see generally column 1, lines 66-67, column 2, lines 1-12).

In reference to claim 3, Otani further discloses that the synchronization message includes MAC and IP addresses of the group of cable modems (see generally column 2, lines 15-25).

Regarding claim 4, Otani discloses that the message received by the protecting device includes IP addresses, a subnet mask, and upward/downward frequencies, which are all DOCSIS parameters (see generally column 7, lines 7-14).

Regarding claim 5, Otani discloses that each device has a memory that stores control information for the attached modems (see generally column 5, lines 35-65). Upon a failure of the working device, this information is sent to the protecting device, which updates its database with the received information (see generally column 7, lines 1-20).

Referring to claim 6, Otani further discloses that information about the status of the cable modems includes an entire set of synchronization data (see generally column 7, lines 8-19).

Regarding claims 9 and 10, Otani further discloses an N+1 redundancy structure comprising N working central devices and 1 protecting device. When N is greater than 1, the protecting device provides service to a second group of cable modems as claimed in claim 9, and when N is equal to 1, the protecting device does not provide service to a second group of cable modems as claimed in claim 10. See generally column 1, lines 47-50.

Regarding claim 11, Otani further discloses that determining that the protecting device is to take over comprises determining that the working device is not providing signals to a designated node, said node being the monitor device (see generally column 7, lines 1-7).

Regarding claim 13, Otani discloses that determining that the protecting device is to take over service comprises receiving notification that "working" device is no longer sending notifications. This occurs when the monitor device polls the "working" device (see generally column 8, lines 1-57).

Regarding claim 15, Otani illustrates that the working and protecting devices are separate interfaces (see generally figure 1).

Regarding claim 16, Otani further discloses that switching between the working device and the protecting device does not require changing the settings of the terminals (see generally column 1, lines 42-44).

Regarding claim 17, Otani further discloses that the "working" device receives synchronization information from the protecting device after the protecting device takes over service to the group of modems (see generally column 2, lines 38-43; column 7, lines 19-26).

7. Claims 18, 19, 21, and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Otani.

Referring to claim 18, Otani discloses an apparatus capable of acting as a protecting device for a cable network upon failure of a working device comprising a processor and a memory (see generally column 5, lines 7-14) where the memory is configured to receive synchronization data (see generally column 5).

Regarding claim 19, Otani further discloses that the apparatus acting as a protecting device is only a portion of the cable modem center device (see generally column 1, lines 47-49).

Regarding claims 21 and 23, Otani discloses that the memory of the protecting device is configured to receive messages containing IP addresses and control data of the cable modems

connected to the device (see generally column 5, lines 35-64) and taking responsibility for service to the group upon detection that the "working" device is unavailable (see generally columns 5, 6).

8. Claims 25-28, 30, 31, and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Otani.

Regarding claim 25, Otani discloses a computer program having instructions for providing backup service to a group of cable modems comprising receiving information regarding the status of the group of modems from the working device to synchronize the protecting device, determining that the protecting device is to take over service, and taking over service to the group of cable modems (see generally column 2, lines 1-12; column 7, lines 1-19).

Regarding claim 26, Otani further discloses that receiving information involves receiving a synchronization message from the working device via a monitor device (see generally column 1, lines 66-67, column 2, lines 1-12).

Regarding claim 27, Otani discloses that each device has a memory that stores control information for the attached modems (see generally column 5, lines 35-65). Upon a failure of the working device, this information is sent to the protecting device, which updates its database with the received information (see generally column 7, lines 1-20).

Regarding claim 28, Otani discloses that information about the status of the cable modems includes an entire set of synchronization data (see generally column 7, lines 8-19).

Regarding claim 30, Otani further discloses an N+1 redundancy structure comprising N working central devices and 1 protecting device. When N is greater than 1, the protecting device provides service to a second group of cable modems. See generally column 1, lines 47-50.

Regarding claim 31, Otani further discloses that determining that the protecting device is to take over comprises determining that the working device is not providing signals to a designated node, said node being the monitor device (see generally column 7, lines 1-7).

Regarding claim 33, Otani further discloses that the "working" device receives synchronization information from the protecting device after the protecting device takes over service to the group of modems (see generally column 2, lines 38-43; column 7, lines 19-26).

9. Claims 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Otani.

Regarding claim 34, Otani discloses an apparatus capable of acting as a protecting device for a cable network upon failure of a working device comprising a processor and a memory (see generally column 5, lines 7-14) where the memory is configured to receive synchronization data (see generally column 5).

Regarding claim 35, Otani further discloses that the apparatus acting as a working device is only a portion of the cable modem center device (see generally column 1, lines 47-49).

Regarding claim 36, Otani discloses that the memory contains synchronization information including addresses and control information of the attached modems (see generally column 5, lines 35-64; column 7, lines 1-7)). Otani further discloses that this information is sent to the protecting device (see generally column 7, lines 1-19).

10. Claims 39-43, 45, and 47-50 are rejected under 35 U.S.C. 102(e) as being anticipated by Otani.

Referring to claim 39, Otani discloses a method of providing working service to a group of cable modems comprising sending synchronization data about the modems to a protecting device, determining that the protecting device should take over service, and notifying the

protecting device that it should take over service to the group (see generally column 2, lines 1-12). Otani further discloses that the "working" device discontinues service to the modems when the protecting device takes over (see generally column 2, lines 25-27; column 4, lines 16-21).

Regarding claim 40, Otani further discloses sending a synchronization message from the working device via a monitor device (see generally column 1, lines 66-67, column 2, lines 1-12).

Regarding claim 41, Otani further discloses that the synchronization message includes MAC and IP addresses of the group of cable modems (see generally column 2, lines 15-25).

Regarding claim 42, Otani discloses that the message received by the protecting device includes IP addresses, a subnet mask, and upward/downward frequencies, which are all DOCSIS parameters (see generally column 7, lines 7-14).

Regarding claim 43, Otani further discloses that determining that the protecting device is available comprises sending information pertaining to the current mode parameters to the protecting device (see generally column 7, lines 8-19).

Regarding claim 45, Otani further discloses that determining that the protecting device is to take over comprises determining that the working device is not providing signals to a designated node, said node being the monitor device (see generally column 7, lines 1-7).

Regarding claim 47, Otani discloses that notifying the protecting device comprises sending a switch request message to the protecting device (see generally column 6, lines 52-55).

Regarding claim 48, Otani illustrates that the working and protecting devices are separate interfaces (see generally figure 1).

Regarding claim 49, Otani further discloses that switching between the working device and the protecting device does not require changing the setting of the terminals (see generally column 1, lines 42-44).

Regarding claim 50, Otani further discloses that information regarding the modems is sent from the protecting device to the failed device after discontinuing service (see generally column 2, lines 38-43).

11. Claims 51-53 and 55-57 are rejected under 35 U.S.C. 102(e) as being anticipated by Otani.

Regarding claim 51, Otani discloses a computer program for providing working service to a group of cable modems comprising sending synchronization data about the modems to a protecting device, determining that the protecting device should take over service, and notifying the protecting device that it should take over service to the group (see generally column 2, lines 1-12; column 7, lines 1-19). Otani further discloses that the "working" device discontinues service to the modems when the protecting device takes over (see generally column 2, lines 25-27; column 4, lines 16-21).

Regarding claim 52, Otani discloses that receiving information involves receiving a synchronization message from the working device via a monitor device (see generally column 1, lines 66-67, column 2, lines 1-12).

Regarding claim 53, Otani further discloses that information pertaining to all current parameters of the group of modems is sent in order to allow the protecting device to provide service to the group of modems (see generally column 7, lines 8-19).

In reference to claim 55, Otani discloses that the monitor program receives notification that a signal from the working device is no longer being received and determines that the protecting device is to take over (see generally column 7, lines 1-7).

Regarding claim 56, Otani further discloses that the instructions for notifying the protecting device comprises sending a switch request message (see generally column 6, lines 52-54, column 7, lines 1-20).

Regarding claim 57, Otani further discloses that the "working" device receives synchronization information from the protecting device after discontinuing service to the group of modems (see generally column 2, lines 38-43; column 7, lines 19-26).

12. Claim 58 is rejected under 35 U.S.C. 102(e) as being anticipated by Otani. Otani discloses a method of providing backup service to a group of network nodes comprising receiving information regarding the status of the group of network nodes from the working device to synchronize the protecting device, determining that the protecting device is to take over service, and taking over service to the group of cable modems (see generally column 2, lines 1-12).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otani. Otani discloses all of the elements as applied above in reference to claim 34 from which claim 38 depends. Otani does not disclose that the processor or memory device of the working device is configured to send a switch request message indicating that the protecting device should take over. In the system of Otani, it is a separate monitor device, which comprises a memory and processor, that provides the message to the protecting device upon realizing the failure of the working device (see generally column 6, lines 45-67; column 7, lines 1-20). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Otani to have the functions of the monitor device be performed in the working device in order to reduce the number of components required.

16. Claims 20 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani in view of Horton, Jr. et al ("Horton").

Regarding claim 20, Otani discloses all of the elements as described above in reference to claim 19. Otani does not disclose that the apparatus is embodied as a line card. Horton discloses a cable modem system comprising *at least one* CMTS (see generally column 4, lines 61-65) where the CMTS is embodied as a line card (see generally column 5, lines 31-32). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the

teachings of Otani to include a CMTS embodied as a line card, as described by Horton, so that the device can be easily exchanged in the event of a failure.

Regarding claim 59, Otani discloses all of the elements as described above in reference to claim 58. Otani does not disclose the use of the system within a wireless network. Horton discloses cable modem system comprising *at least one* CMTS wherein there are wireless transmission links between homes and the CMTS (see generally column 11, lines 1-17). It would have been obvious to one of ordinary skill in the art at the time of the invention to extend the teaching of Otani for use in wireless networks, as described by Horton, in order to reduce the amount of physical cabling needed to the homes and to reduce bandwidth requirements.

Allowable Subject Matter

17. Claims 7, 8, 12, 14, 22, 24, 29, 37, 46, and 54 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Referring to claims 12, 22, and 37, prior art of record fails to disclose the use of HELLO messages as claimed by the applicant, but rather utilizes a polling method to determine if a device is operating.

Referring to claims 7, 44, and 54, prior art of record does not discloses updating those parameters which have changed as claimed by the applicant, but rather sends complete update information.

Regarding claims 14, 32, and 46, prior art of record, prior art does not disclose that the network node used to notify the protecting device is a cable mode or an upconverter as claimed by the applicant, rather, the prior art utilizes a monitor device.

Regarding claims 8 and 29, prior art of record fails to disclose that the working and protecting device operate on the same downstream channel.

Regarding claim 24, prior art of record does not disclose that both the working and protecting devices use the same downstream frequency.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Demetria A. Williams whose telephone number is (703) 305-4078. The examiner can normally be reached on Monday - Friday, 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

daw
November 1, 2002

CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 11/1/02